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Status of Allowed and Allowable Claims

Claims 75 and 81 were amended into independent form in the Amendment and Response filed previously on June 12, 2006. Claims 76-79 and 82-83 depend on claims 75 and 81. Accordingly the January 16 office action erroneously listed claim 75-79 and 81-83 as allowable, when those claims should have been designated as allowed. In any event, claims 75-79 and 81-83 have not been rejected and should therefore be allowable.

Claims 70 and 72-74 were noted as allowable if amended. Claim 70 and 72-74 depend on rejected independent claim 63. Because it is believed that independent claim 63 is not anticipated by Thome for the reasons discussed below, it is respectfully requested that the allowability of claims 70 and 72-74 be considered in conjunction with reconsideration of the allowability of independent claim 63. If independent claims 63 is not allowable, claims 70 and 72-74 will be placed in allowable form.

Anticipation Rejection

Reconsideration of the anticipation rejection of claims 63-69, 71 and 80 is respectfully requested. For the reasons explained below, independent claim 63, and its dependent claims 64-74 and 80 contain subject matter which is not disclosed in Thome, thereby demonstrating that Thome cannot anticipate those claims.

Thome discloses a conventional urethral catheter which has a balloon 34 or 36 attached at its forward end. The balloon is inflated once it is positioned inside the bladder, as shown in Fig. 11. The inflated balloon locates the catheter in a position where a microwave antenna (not specifically shown) will radiate energy into the diseased tissues of the prostate while leaving healthy tissue at the bladder neck preserved. Column 9, lines 9-16. A separate inflation lumen 62 supplies inflation fluid to the balloon. Column 5, lines 49-59.

Thome's catheter also has cooling intake lumens 64A and 64B which conduct input cooling fluid along the length of the catheter, and larger cooling exhaust lumens 66A and 66B which carry the heated cooling fluid out of the catheter. The cooling fluid enters the catheter, flows the length of the catheter in the cooling intake lumens, flows

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around the microwave antenna at the forward end of the catheter, and then flows back and out of the catheter through the exhaust lumens. The cooling fluid is water (column 6, line 37). See also column 6, line 36 to column 7, line 11 and column 10, lines 34-38. The water cools the urethra to prevent damage to the urethral tissue (column 6, lines 44-47), because the cooling water absorbs heat from the adjacent tissue via thermal conduction (column 6, lines 7-9).

The Thome catheter is used according to the treatment method described in US patent 5,413,588 (column 10, line 17-21). The '588 patent confirms that the cooling water protects the adjacent tissue by absorbing heat energy from the tissue ('588 patent, column 3, lines 14-18; column 6, lines 7-10; column 8, lines 3-7).

Nothing in the Thome or the '588 patents discusses any role for the inflation fluid in the balloon, other than inflating the balloon. Undoubtedly, this is because the inflation fluid is air, which is typical. Air would have very little interaction with the microwave energy, particularly because the balloon is located in the bladder, away from the point where the microwave energy enters the diseased prostate.

The Thome reference fails to anticipate numerous aspects of claim 63.

Claim 63 recites that the expandable reservoir is located on the catheter to extend along a portion of the prostatic urethra (line 11). As shown in Fig. 1, the location of the expandable reservoir is within the prostatic urethra, not in the bladder as is disclosed in Thome.

Claim 63 recites that the reservoir expands to compress tissue adjacent to reservoir and reduce blood flow through the compressed tissue to reduce the transmission of heat by blood flow away from the compressed tissue (lines 13-17). The Thome patent does not disclose expanding the balloon against the adjacent prostatic urethra tissue. The balloon in the Thome patent is expanded in the open volume of the bladder. Because the expanded balloon in the Thome patent is within the open volume of the bladder, it cannot compress adjacent tissue. Moreover Thome's balloon cannot compress the adjacent tissue to restrict blood flow which would reduce the transmission of heat.

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There is nothing disclosed in or suggested by Thome about the greater effectiveness of a therapeutic heat treatment created by restricting the blood flow so that the blood does not carry the therapeutic thermal energy away from the tissue which is treated. To the contrary, the whole focus of the cooling fluid in Thome is to remove the heat from the tissue and prevent it from being damaged, not compress the tissue to allow the heat to better heat the tissue as is described in claim 63.

Claim 63 recites that the pressurized liquid which expands the reservoir is sufficient to absorb enough energy from the microwaves to heat therapeutically a first region of tissue immediately adjoining the expanded reservoir (lines 18-22). The entire focus of Thome is to remove heat energy from the adjacent tissue and prevent heat damage to it. Indeed, the position of the expandable balloon within the bladder in Thome is away from the point where the microwave energy is applied to the tissue, because Thome discloses enough spacing to prevent damage to the healthy tissue at the bladder neck. Thus, even if the air in the expandable balloon of Thome was heated, the balloon is located in a position where heat could not be transferred to compressed prostatic tissue surrounding the urethra.

Claim 63 also recites that the expandable reservoir and liquid permit transferring sufficient electromagnetic energy from the antenna to heat therapeutically a second region of the prostate tissue beyond the first region (lines 22-25). Because the entire focus of the cooling water in Thome is to prevent any heat damage to the adjacent tissue, there is only one region of heating adjacent to the tissue and that heating is created by microwave energy.

In summary, claim 63 involves an expandable reservoir which absorbs microwave energy and thermally conducts that absorbed energy to heat therapeutically a first region of adjacent prostatic tissue that has been compressed by the expanded balloon, while simultaneously permitting the microwave energy to radiate into a second region of prostatic tissue beyond the first region. Because the first region of adjacent prostatic tissue has been compressed, the blood flow through that compressed tissue is unable to conduct as much heat away from that first region of tissue, thereby

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contributing to its heat treatment treatment. The second region of tissue beyond the first region is heated by the radiated microwave energy. Nothing in Thome discloses or suggests compressing the tissue to reduce heat removal while simultaneously applying heat from an expandable reservoir in a first region and heating a second outer region by emitted microwave energy. Thome is simply a different type of catheter having an entirely different type of treatment modality, compared to the catheter recited in claim 63.

Claims 64-69, 71 and 80, depend directly or indirectly on claim 63. Accordingly, the subject matter of these claims is not anticipated for the same reasons that claim 63 is not anticipated by Thome. Claim 64 relates to the distinction between the first and second therapeutically treated regions. Thome does not discuss two treatment regions. Claim 65 relates to a capacity of the reservoir to treat a bladder neck and expand a urine passageway through the bladder neck. Thome intends to preserve the bladder neck area, not treat it. Claims 70 and 72-74 have already been noted as allowable. The pending claims are patentably distinguishable from Thome by other limitations.

Conclusion

For the reasons explained and others, it is believed that all pending claims are in condition for allowance. Allowance is respectfully requested. The Examiner is requested to contact the undersigned by telephone to discuss any issues which may inhibit the immediate allowance of the claims.